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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,468	09/26/2003	Eric A. Bansbach	6978-250/COA	9724
27572	7590	09/09/2004	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			NGUYEN, THU V	
P.O. BOX 828			ART UNIT	PAPER NUMBER
BLOOMFIELD HILLS, MI 48303			3661	

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/672,468

Applicant(s)

BANSBACH ET AL.

Examiner

Thu Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Double Patenting

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

2. Claims 9-16 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 9-16 of copending Application No. 10/196,899. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-16 directs to generating digital control signals. Signals themselves are just abstract phenomenon, generating signals alone do not result in tangible and useful application.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

The specification does not teach nullifying blocks of control signal pulses such that each successive block of null pulses has less number of nulled pulses taught in claim 1, lines 7-9. Further, the specification does not disclose executing step (b) over a second half of the dithering period taught in claim 2.

Claim Objections

5. Claim 10 is objected to because of the following informalities:

In claim 10, line 2, the claimed “variables a time and a period as variables” should be corrected to “a time and a period as variables”.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. In claim 1, line 3-4, and lines 7-8, the claimed "having at least one nulled pulse per block" is ambiguous. It is not clear if it is the original control signal that should have at least one nulled pulse per block; or if it is only after mulling procedure that the control signal pulses should have at least one nulled pulse per block.
- b. Other claims are rejected as being dependent on the rejected base claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green et al (US 2003/0058506) in view of Levine (US 2002/0016653).

As per claim 1, 3-4, 6-7, Green teaches a method for superimposing a dithering signal onto a digital signal, the method comprises: nulling blocks of signal pulses such that a successive block of nulled pulses has the same number of null pulses as the block immediately precedes the succeeding block (fig.5). Green does not explicitly teach that the digital signal is the control

signal. However, Levine suggests providing control signal from a transponder to the vehicle (para 0013). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the control signal of Levine to the database of Green in order to include automatic control of the vehicle when the vehicle fail to comply with certain traffic requirement at a specific place.

As per claim 2, 5, 8, determining period of dithering signal, varying dithering period in a course of control, varying the duty cycle of a signal by modulating pulse width, determining period of pulse signal by taking reciprocal of a frequency of the signal would have been well known signal characteristic in physics.

10. Claims 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dominke et al (W) 02/32742) (Using US publication US 2003/0114969 as a translation) in view of Ichimaru (US 5,924,703) .

As per claim 17, Dominke teaches providing output force generated by the steering actuator assembly, the method comprises: modifying digital control signal by providing blocks of control signal pulse gH11 (fig.11a) consisting of at least one nulled block; and providing the output force generated by the actuator in response to the control signal (para 0042; 0058; 0143). Dominke does not teach modifying the digital control signal by dithering the signal. However, Ichimaru teaches a method for generating control signal in which a block of the control signal is nulled by dithering process (fig.9; col.3, lines 31-36). It would have been obvious to a person of

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ordinary skill in the art at the time the invention was made to produce the control signal of Dominke using dithering method of Ichimaru in order to facilitate controlling and adjusting frequency and duty cycle of the control signal.

As per claim 18-21, using output force from the actuator to move the clutch actuation mechanism, causing dip in the control signal as a result of elapse of supporting power, the amplitude of the dip is determined by the nulled period in which the supported power is stopped, and the change in the output force generated by the actuator effect movement of the actuation mechanism would have been both well known and natural phenomenon.

Allowable Subject Matter

11. Claims 9-16 are allowed over prior arts if the statutory double patenting and the 35 USC 101 rejection above is overcome.

12. The following is a statement of reasons for the indication of allowable subject matter:

Prior arts of record does not teach a method for producing a dithered control signal which is produced by superimposing a dithering signal onto a digital control signal, the method comprises: calculating a pulse duty cycle PDC for each pulse of the dithered control signal using the time averaged duty cycle DC_{avg} , the amplitude AMP and the wave function WF of the dithered control signal.

Any response to this action should be mailed to:

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or faxed to:

(703) 305-7687, (for formal communications intended for entry)

Or:


(703) 305-7687 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park V, 2451
Crystal Drive, Arlington, VA., Seventh Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Thu Nguyen whose telephone number is (703) 306-9130. The
examiner can normally be reached on Monday-Thursday from 8:00 am to 6:00 pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Thomas Black, can be reached on (703) 305-8233. The fax phone number for this
Group is (703) 305-7687.

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Group receptionist whose telephone number is (703) 308-1111.


THU V. NGUYEN
PRIMARY EXAMINER
September 4, 2004